

Python Programs by AP Computer Science Principles students:

Benjamin. T.

```
main.py Run Shell Clear
1 import random
2 # main function
3 def main():
4     # Local variables
5     currentNumber = 0
6     oddCounter = 0
7     evenCounter = 0
8     totalNumbers = 100
9     for counter in range(1,101):
10        # get random number
11        currentNumber = random.randint(1, 100)
12        # Check whether number is odd or even
13        if isEven(currentNumber) == 1:
14            evenCounter+=1
15        else:
16            oddCounter+=1
17        print ("Out of", totalNumbers, "random numbers, ", oddCounter,\
18            "were odd, and ", evenCounter, "were even.")
19        # The isEven function returns True if number is even, False if odd.
20    def isEven(currentNumber):
21        if currentNumber%2 == 0:
22            return 1
23        else:
24            return 2
25    main()
Out of 100 random numbers, 41 were odd, and 59 were even.
> |
```

```
main.py Run Shell
1 def main():
2
3     # Local variable
4     number = 0
5     # Get number
6     number = int(input("Enter an integer: "))
7     # display information regarding whether the number is prime
8     if is_prime(number):
9         print ("the number you entered is a prime number.")
10    else:
11        print ("the number you entered is not a prime number.")
12    # The is_prime function receives a number as an argument, and returns
13    # True if number is prime, False otherwise.
14    def is_prime(number):
15        half = int(number/2)
16        for count in range(2, half+1):
17            if number % count == 0:
18                return False
19            else:
20                return True
21    main()
Enter an integer: 44
The number you entered is not a prime number.
> |
```

Nayeli F:

Project Name: **Magic Date**

```
1 # main function
2 def main():
3     # local variables:
4     day = 0
5     month = 0
6     year = 0
7     # Get month
8     month = int(input("Enter the month in numeric form: "))
9     # Get day
10    day = int(input("Enter the day of the month: "))
11    # Get year
12    year = int(input("Enter the year in two digit format: "))
13    showmagicdate(day,month,year)
14
15    # The showmagicdate function accepts the day, month, and year as arguments
16    # calculates whether the entered date is a magic date, and displays the results
17
18    def showmagicdate(d, m, y):
19        #local variable - calculates the multiplication of day and month
20        daytimesmonth = d*m
21        print("The date is ", m, "/", d, "/", y)
22        if d*m == y:
23            print ("This is a magic date")
24        else:
25            print("This is not a magic date")
26
27    main()
```

Execute Mode, Version, Inputs & Arguments

3.7.4

Result

executed in 44.589 sec(s)

```
Enter the month in numeric form: 5
Enter the day of the month: 10
Enter the year in two digit format: 20
The date is 5 / 10 / 20
This is not a magic date
```

Reagan L:

```
1 def main():
2     for year in range(2010, 2021):
3         print(year, "has", numberOfDaysInAYear(year))
4
5     # returns the number of days in a year
6     def numberOfDaysInAYear(yr):
7         if (isLeapYear(yr)):
8             return 366
9         else:
10            return 365
11
12    # Determine if it is a leap year *
13    def isLeapYear(y):
14        if(y % 400 == 0 or (y % 4 == 0 and y% 100 != 0)):
15            return True
16        else:
17            return False
18    main()
```